Dump load
DL-35K / DL-57K

User manual
Version 2.0 / 716005

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1 General information

This manual describes the DL – Dump Load series developed by DVE Technologies ApS. This device is used in combination with the AR – Active Rectifiers, AF – Active Frontends and GFI – Grid Feed Inverter series of inverters for operation of small wind turbines.

The purpose of the dump load is to be able to control the energy of the small wind turbine, if the primary load of any of the above mentioned inverters should fail.

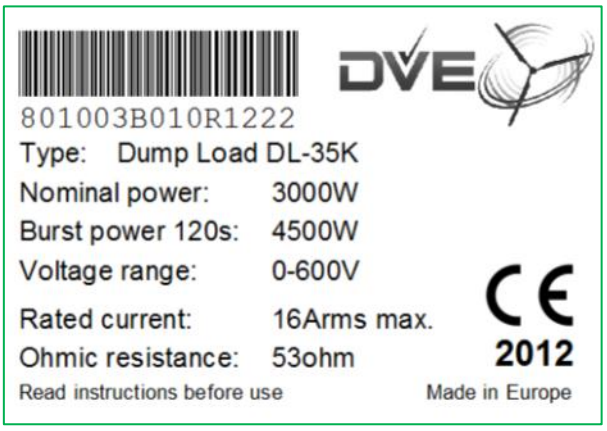
1.1 Scope of supply

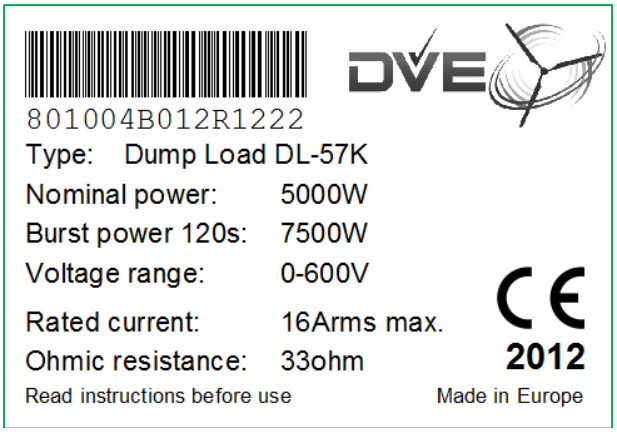
The following articles are included in the scope of supply when you purchase the DL-35K or DL-57K dump load:

- DL-35K dump load or DL-57K dump load
- 3 meter pre-connected EMC cable.

1.2 Identification label

The identification of the type of dump load can be found on the left hand side of the unit. The ID markers look like the below pictures.





1.3 EC declaration

EC DECLARATION of CONFORMITY

DVE Technologies ApS

hereby declares that the product(s)

DL-35K / DL-57K dump load

satisfies the following specific regulations:

- 2006/95/EC (EC Low Voltage Directive)
- 2004/108/EC (EC EMC Directive)

and their amendments

Normative standards applied:

Low voltage directive 2006/95/EC
EN 50178 (electrical safety)

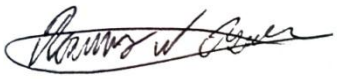
EMC directive 2004/108/EC
EN 61000-6-1
EN 61000-6-2
EN 61000-6-3
EN 61000-6-4

RoHS directive 2002/95/EC with amendment 2005/618/EC

Date of declaration: 20/12-2011

Signed by: DVE Technologies ApS
Sdr. Tingvej 10
DK-6630 Roedding
Denmark

Technical Manager
Rasmus Pedersen



2 Safety instructions

2.1 General safety instructions

The DL – Dump Load is to be installed by trained staff.

Only trained staff is allowed to open the device and connect/disconnect the device from the inverter.

Wait at least 5 minutes after disabling the inverter and the small wind turbine so that the capacitors of attached devices can discharge.

If the input voltage of the device is higher than 600V voltage (ph-ph), there will be a potential damage and therefore no guarantee claims will be accepted.

All Information and advice attached to the device, such as safety instructions or danger warnings and technical data (type plate) are:

- not to be removed
- not to be damaged
- to be kept readably

2.2 Correct use

The correct use involves:

- completely reading and following the content of the documentation and attend to the safety instructions and danger warnings comprised therein
- mounting and connecting the device according to the installation instructions by trained staff

Moreover we refer to the following guidelines:

- instructions of the small wind turbine manufacturer

DVE Technologies is not liable for damage resulting from unintended use of the DL – Dump Load series.

2.3 Warning and hazards

The dump load can during operation have hot surfaces. The surfaces of the dump load are not to be touched, unless the device of which it is connected has been disabled. The housing of the dump load is marked with "hot surface" markers as below.

2.4 Storage and transport

When the device is stored or transported without the original packaging, this is to be considered as extraordinary burden and may cause property damage.

Store the device in a dry, well ventilated room.

Environmental Conditions
Pay attention to the following notes to provide for a long service life and trouble-free operation:

- Protect the device against mechanical damage
- Protect the device against dirt and humidity
- Excessive solar radiation will impair the serviceability of the device. The optimum ambient temperature is in the range of 18-20°C
- Take care that a sufficient amount of space is provided around the device. See also chapter 3.4

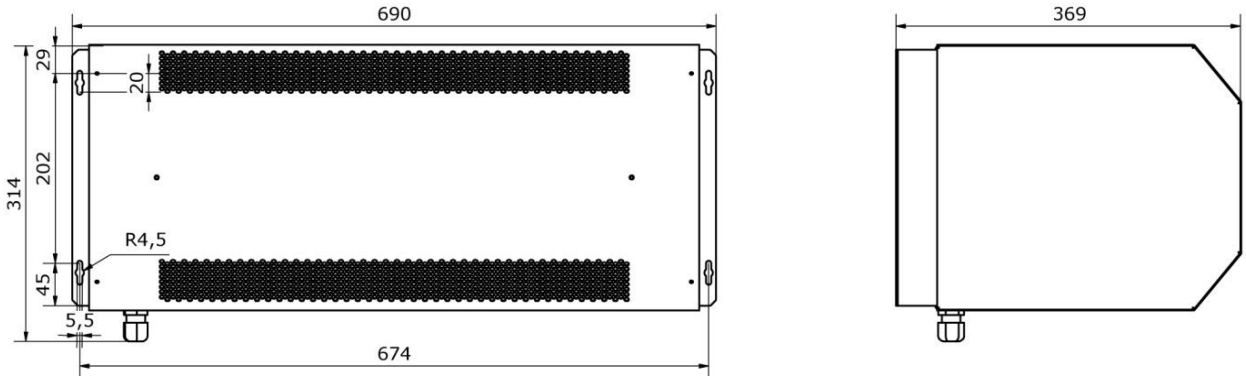
3 Mounting

3.1 Mounting the DL – Dump Load

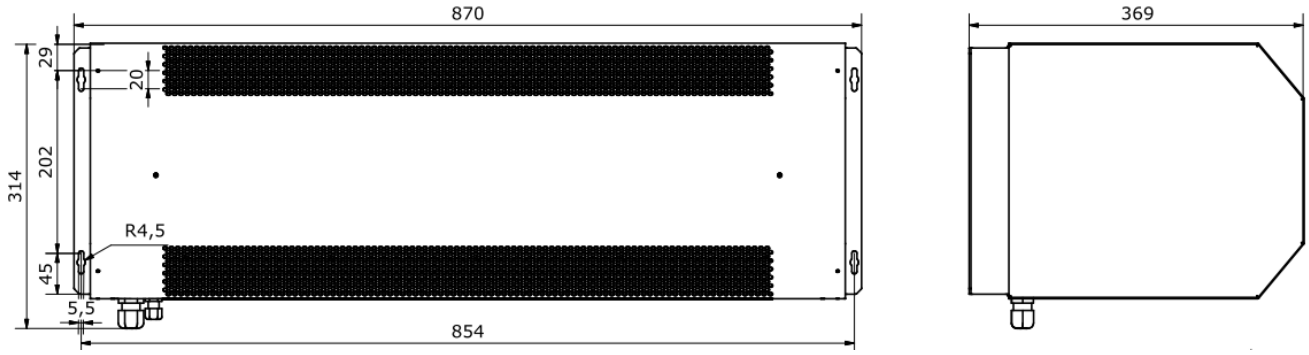
The DL – Dump Load must be mounted in a dry environment and horizontal to a weight-bearing wall.

Please consider the safety instructions technical data, when mounting the device.

3.2 DL-35K Mechanical drawing



3.2 DL-57K Mechanical drawing



3.3 Ventilation and free space

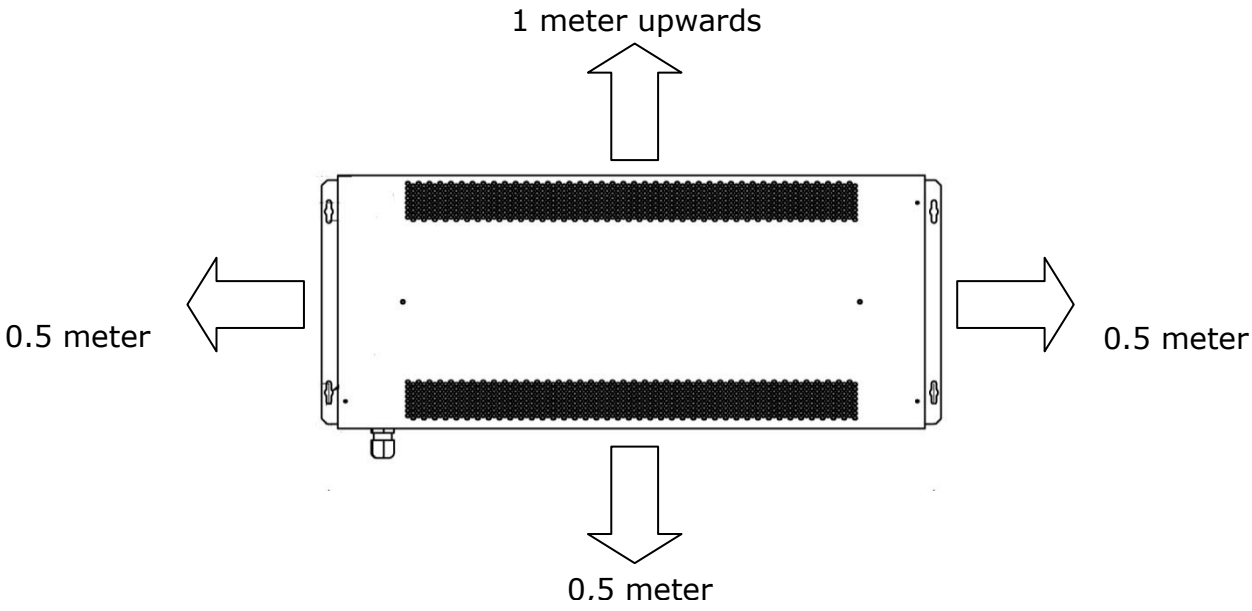
The DL – Dump Load series has natural ventilation. i.e. a fan is **not** required. The air intake in the bottom part of the cover and air outlets in the top part of the cover must be freely suspended and left open to assure adequate ventilation.
The back plate is raised from the surface on which the unit is mounted, as this makes a safety barrier to the surrounding wall and a cooling channel. Do not cover any of the air intake or air outlets.
It is recommended that the Dump Load is not mounted onto or near flammable material.

The Dump Load is to be mounted in a horizontal position to ensure correct air flow through the unit.

If the circulation of air flow is restricted, the DL-35K / DL-57K and nearby devices may be overheated.

When installing the dump load, make sure that there is sufficient space between other devices. Limited space may lead to overheating.

See spacing recommendations below:



3.4 Mounting instructions

DVE Technologies ApS recommends mounting the device to a vertical wall in a horizontal position.
Pay attention that the device is not tilted to the front. The mounting angle should be 90°.

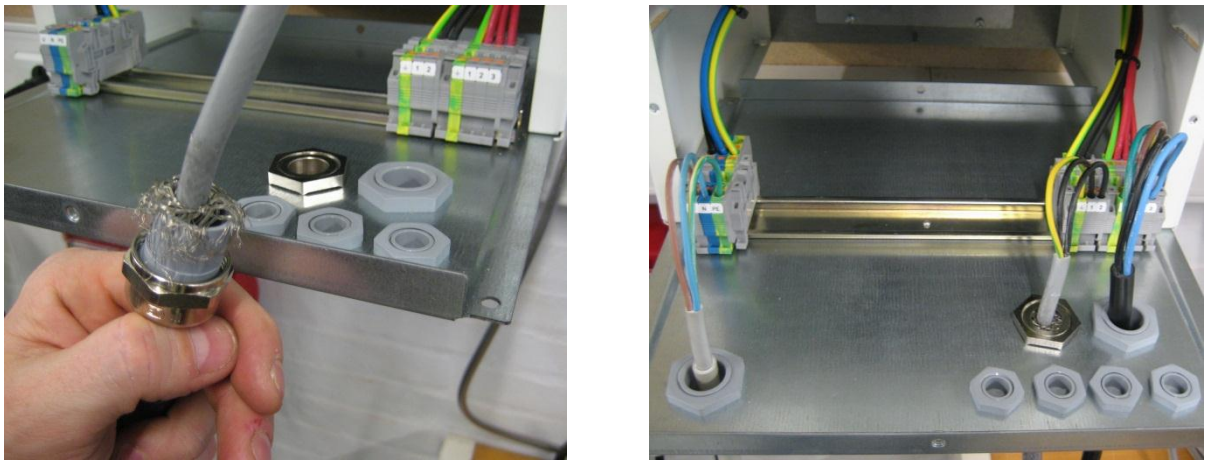
The DL – Dump Load is constructed with integrated mounting flanges. The Dump Load is to be bolted to the wall with 5mm bolted connections.

- Select a mounting location for simple operation
- A location away from children's reach is recommendable due to the possibility of hot surfaces during operation.
- Mark up the wall according to the dimensions drawing, and install 5mm bolts to the wall with a distance of 5mm
- Hang the DL – Dump Load to the bolted connections, and tighten the bolts.
- Make sure that the unit is tightened firmly.

4 Connection

4.1 Electrical connection of the Dump Load

The dump load comes with a 3 meter pre mounted cable. It is not recommended to extend this length, but it can be shortened to the required length of installation.
Use the delivered cable and connect this directly to the inverter which it came with.
Connect the two phases together with the green-yellow conductor in the terminal blocks marked in the inverter documentations
The EMC screen of the cable is to be terminated in the special EMC gland entering the Inverter cabinet.



Example of Dump Load connection to GFI – Grid Feed Inverter

The connections are made according to the type of unit and the wiring diagram which came with that unit.

Note:
Single phased system typically has a single dump-load controller output, where two and three phased systems typically have 2 dump-load controller outputs.

5 Technical data

Technical data		
DVE Technologies part number	DL-35K / 801003	DL-57K / 801004
Nominal power	3000W	5000W
Burst power 120s	4500W	7500W
Voltage range	0-600V	0-600V
Rated current	16Arms max	16Arms max
Ohmic resistance	53ohm	33ohm
IP code	IP20	IP20

6 Maintenance

The DL – Dump Load is designed for a minimum amount of maintenance.
We recommend checking the following at regular intervals in order to ensure a proper operation of the device:

- The unit is to be kept clean on all the surfaces
- Dirt and dust build up at the air intakes can restrict the heat dissipation. Check the air intake for dirt on a regular basis and clean it with a soft brush or compressed air.
- To clean the inside of the unit, make sure the device of which it is connected to have been turned off. The cleaning can be done with compressed air, trough the perforated cover of the dump load.
- Do not intend to remove the perforated cover during cleaning.

7 Guarantee and liability

The guarantee period is 1 year from the date of delivery.
Guarantee claims are excluded:

- when the device has been employed beyond its intended use
- when the device has been mounted non-standard or improperly, especially by electricians without license
- when the device has been employed although the protection equipment was defective
- when the maximum permissible input voltage has been exceeded
- through improper operation
- when the device or its equipment have been modified
- when the device was affected by foreign material or force majeure

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